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David Gaudout

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WIGGIN AND DANA LLP
ATTENTION: PATENT DOCKETING
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EXAMINER

PIHONAK, SARAH

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,043	Applicant(s) GAUDOUT ET AL.	
	Examiner SARAH PIHONAK	Art Unit 4121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 and 7-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-6 and 11-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/7/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application is a 371 (national stage application) of PCT/FR04/03173, filed on 12/9/04, and claims foreign priority to Application No. 0314394, filed on 12/9/03 in France.

Priority

This application, which has an effective filing date of 12/9/04, claims foreign priority to Application No. 0314394, filed on 12/9/03. A certified copy of the foreign application is on file. The priority date given to the instant claims is 12/9/03.

1. Claims 1-19 are pending.
2. Applicant's election without traverse of the invention of Group I, drawn to a composition, claims 4-6, and 11-19, in the reply filed on 3/9/09 is acknowledged. Applicant also made a species election of a formulation adjuvant of plant oil, drawn to claims 4-6, without traverse, in the reply filed on 3/9/09.
3. Claims 1-3, and 7-10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/9/09.
4. Claims 4-6, and 11-19 were examined.
5. Claims 4-6, and 11-19 are rejected.
6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any

Art Unit: 4121

inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 4-6, and 11-19 are rejected under 35 U.S.C. 102(b) as being unpatentable over EP 0945066 patent publication with Yu et. al. *J. Agric. Food Chem.*, **37**, pp. 725-730, 1989, Lawson et. al., *Plant Med.*, **57**, pp. 363-364, 1991, and Yeh et. al., *J. Nutrit.*, **131**, pp. 989S-993S, as evidentiary references. The Lawson et. al. reference was supplied by the Applicants in the Information Disclosure Statement filed on 6/7/06.

9. Instant claim 4 cites a composition of a biopesticide comprised of diallyl sulfide (DAS), diallyl disulfide (DAS2), diallyl trisulfide (DAS3), and diallyl tetrasulfide (DAS4), and the elected adjuvant, plant oil. Instant claim 4 also cites

Art Unit: 4121

that the sum by weight of the listed compounds is at least one mg. per gram of composition. The EP '066 publication cites a natural pesticide which is comprised of garlic oil or garlic extract, and additional plant oils (claims 1 and 2, pg. 10).

While the EP '066 publication does not specifically cite that DAS, DAS2, DAS3, and DAS4 compounds are present in the pesticide composition, Lawson et. al. teaches that these compounds are naturally present in garlic oil and extracts (p. 363, right column, 1st paragraph). While the EP '066 publication does not specifically state that the DAS, DAS2, DAS3, and DAS4 compounds comprise at least one mg. per gram of the pesticide composition, Yu et. al. teaches that the total amount of DAS, DAS2, and DAS3 is nearly 75 % of the total yield of garlic extract from steam distillation (p. 729, Table II, column A, entries 8, 21, and 31; DAS yield is 29.6×10^{-6} g, DAS2 yield is 548.11×10^{-6} g, and DAS3 yield is 1010.83×10^{-6} g; yield of DAS + DAS2 + DAS3 = 1548.54×10^{-6} g; total extract yield is 2065.25×10^{-6} g.; $1548.54 \times 10^{-6} \text{ g} / 2065.25 \times 10^{-6} \text{ g} = .75$). The EP '066 publication teaches that for a composition that is 1000 g., the amount of garlic extract may be 850 g. (p. 3, paragraph [0014], sample 2). For a 1000 g. composition, in which the garlic extract comprises 850 g., the amount of DAS, DAS2, and DAS3 present would be 75% of the 850 g., or 637.5 g. The EP '066 publication teaches that sample 1 is diluted as one part to 49 parts water (p. 3, paragraph [0016]). For a diluted sample of total mass of 50 g., in which sample 1 is equal to 1 g., the total amount of DAS, DAS2, and DAS3 would be .637 g. For the composition of sample 1, the amount of these compounds would be

Art Unit: 4121

equivalent to .637 g./50 g., which is approximately 13 mg. of DAS + DAS2 + DAS3/g. of composition.

10. Instant claim 5 cites the composition as stated in instant claim 4, and also, that the compounds DAS2 and DAS3 comprise at least 50 % of the diallyl polysulfides. While the EP '066 publication does not explicitly state so, the DAS2 and DAS3 compounds are naturally present in garlic extracts. While the EP '066 does not specifically state that DAS2 and DAS3 comprise at least 50 % of the diallyl polysulfides in the pesticide composition, Yu et. al. teaches that DAS2 and DAS3 are naturally present in extracts of garlic resulting from steam distillation at an amount greater than 50 % (p. 729, Table II, column A, entries 21 and 22). For example, the amount of DAS2 (entry 21) is 548.11×10^{-6} g., and the amount of DAS3 is 1010.83×10^{-6} g., from a total extract weight of 2065.23×10^{-6} g. (p. 729, Table II, entries 21 and 31). The total amount of DAS2 and DAS3 is therefore 1558.94×10^{-6} g., which is $1558.94 \times 10^{-6} \text{ g.} / 2065.23 \times 10^{-6} \text{ g.} = 75 \%$. Therefore, the amount of DAS2 and DAS3 present in garlic extracts from steam distillation comprises more than 50 % the extract weight.

11. Instant claim 6 cites the composition as stated in instant claim 4, and also, that the biopesticide comprises an extract of garlic. The EP '066 publication teaches that the compounds are derived from garlic extracts (p. 3, paragraph [0014]).

12. Instant claim 11 cites the composition containing DAS, DAS2, DAS3, DAS4, the sum by weight of which is at least one mg. per g. of composition. Instant claim 11 also cites that the composition contains gamma-glutamyl-S-

Art Unit: 4121

allylcysteine (Gluacs). The EP '066 cites a composition comprised of garlic oils and extracts (p. 10, claim 1). While the EP '066 does not specifically cite that DAS, DAS2, DAS3, and DAS4 are present in the composition at an amount of at least one mg. per g. of composition, Lawson et. al. teaches that DAS, DAS2, DAS3, and DAS4 are naturally present in garlic extracts, as explained for instant claim 4. The EP '066 publication also teaches that the amount of DAS, DAS2, DAS3, and DAS4 present in the composition is at least one mg. per g. of the composition, with Yu et. al. as an evidentiary reference, as explained for instant claim 4. While the EP '066 publication does not explicitly state that Gluacs is present in the composition, Yeh et. al. teaches that Gluacs is also naturally present in the water soluble extracts of garlic (Abstract). Therefore, while the EP '066 publication does not explicitly state that Gluacs is present in the pesticide composition, it is known in the art that it is naturally occurring in the extracts of garlic.

13. Instant claim 12 cites a composition containing DAS, DAS2, DAS3, DAS4, the sum by weight of which is at least one mg. per g. of composition. This element is implicitly taught by the EP '066 publication with Yu et. al. and Lawson et. al. as evidentiary references, as described for instant claim 4.

14. Instant claim 13 cites the composition as stated in instant claim 12, and also, that DAS2 and DAS3 comprise at least 50 % of the diallyl polysulfides. While the EP '066 publication does not explicitly state this, Yu et. al. teaches that DAS2 and DAS3 naturally comprise more than 50 % of the diallyl polysulfides present in garlic extracts, as explained for instant claim 5 above.

Art Unit: 4121

15. Instant claim 14 cites the composition as stated in instant claim 12, and that the composition comprises an extract of garlic. The EP '066 publication explicitly teaches that the pesticide composition is comprised of garlic extracts (p. 10, claim 1).

16. Instant claim 15 cites the composition as stated in instant claim 14, and also, that diallyl polysulfides, allyl methyl polysulfides, dimethyl polysulfides, allyl propyl polysulfides, methyl propyl polysulfides, dipropyl polysulfides, dimethyl thiosulfinate, and allicin are predominant in the garlic extract. While the EP '066 publication does not explicitly state that these compounds are present in the composition, it is known that they are naturally present in garlic extracts. Lawson et. al. explicitly states that diallyl polysulfides, such as DAS2, DAS3, and DAS4 are present in garlic extracts, as well as dimethyl thiosulfinate (p. 363, right column, 1st paragraph). Lawson et. al. also states that allicin is not initially present in garlic, but is produced once garlic is crushed or minced (p. 363, 1st paragraph). Yu et. al. also states that diallyl thiosulfinate, which is also known as allicin, is a major constituent of garlic extracts (p. 725, right column, last sentence). Yu et. al. also teaches that allyl methyl polysulfides (p. 728, Table I, item 25), dimethyl polysulfides (p. 728, Table I, item 18), allyl propyl polysulfides (p. 728, Table I, item 19), and methyl propyl polysulfides (p. 728, Table I, item 11) are present in garlic extracts. Yeh et. al. also teaches that dipropyl polysulfides, such as dipropyl trisulfide, are present in garlic extracts (Abstract). Therefore, while the EP '066 publication does not explicitly state that these compounds are a major component of the garlic extract present in the

Art Unit: 4121

composition, it is known in the art that these compounds are naturally a major constituent of garlic oils and extracts.

17. Instant claim 16 cites the composition as stated in instant claim 14, and also, that the compounds diallyl polysulfides, dimethyl disulfide, dipropyl disulfide, dimethyl thiosulfinate, and allicin are present in the garlic extract. While the EP '066 publication does not explicitly state that these compounds are present in the composition from the garlic extracts, it is known in the art that these compounds are naturally occurring from garlic extracts. Lawson et. al. teaches that diallyl polysulfides such as DAS2, DAS3, and DAS4 are present in garlic extracts, as well as dimethyl thiosulfinate, and allicin, from crushed garlic (p. 363, right column, 1st paragraph). Yu et. al. teaches that dimethyl disulfide is present in garlic extracts (p. 728, Table I, item 5), while Yeh et. al. teaches that dipropyl disulfide is present in garlic extracts (p. 992S, left column, paragraph 2).

Therefore, while the EP '066 publication does not explicitly state that these compounds are present in the composition from garlic extracts, it is known in the art that these compounds are naturally occurring in garlic extracts.

18. Instant claim 17 cites the composition as stated in instant claim 14, and also, that the diallyl polysulfides represent more than 50 % of the sulfur-containing compounds of the garlic extract. While the EP '066 publication does not explicitly state this, it is known that the diallyl polysulfides represent more than 50 % of the sulfur-containing compounds present in garlic extracts. Yu et. al. teaches that, for a garlic extract sample with a weight of 2065.23×10^{-6} g., the diallyl polysulfides such as DAS2 and DAS3 represent more than half the weight

Art Unit: 4121

of the garlic extract sample (p. 729, Table II, items 21 and 31). In Table II of Yu et. al., the total mass of DAS2 and DAS3 is 1558.94×10^{-6} g., which is 75 % of the weight of the garlic extract (Table II, p. 729). As the diallyl polysulfides are naturally represent more than 50 % by weight of the sulfur-containing compounds present in the garlic extracts, it would be obvious that this would also apply to the garlic extract pesticide composition disclosed by the EP '066 publication.

19. Instant claim 18 cites the composition as stated in instant claim 14, and also, that the composition contains allicin. As stated by Lawson et. al., allicin is not present in garlic but is rapidly generated once garlic is crushed or minced. Therefore, it would also be known that during the manipulation of garlic during extraction, allicin would also be produced. As such, while the EP '066 publication does not explicitly disclose that allicin is present in the composition, it would be inherent.

20. Instant claim 19 cites the composition as stated in instant claim 14, and also, that the composition also contains alliin. While the EP '066 publication does not explicitly disclose that alliin is present, Lawson et. al. teaches that alliin is naturally present in garlic (p. 363, right column, 1st paragraph).

21. The information disclosure statement (IDS) submitted on 6/7/06 was filed. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Conclusion

Art Unit: 4121

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARAH PIHONAK whose telephone number is (571)270-7710. The examiner can normally be reached on Monday-Thursday 7:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Nolan can be reached on (571)272-0847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S.P.

/Patrick J. Nolan/
Supervisory Patent Examiner, Art Unit 4121